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U.S.S.N.: 10/741,829  
Filing Date: December 19, 2003  
EMC Docket No.: EMC-03-098CIP1

**In the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the Application.

**Listing of Claims:**

1. (Currently amended) In a data storage environment having a server, a first and second data storage volume, and production data being stored on the first data storage volume, and a copy of the production data, denominated as the data copy, being stored on the second data storage volume, a method, operable on a computer system, of handling updates to the data copy when the environment is configured for processing incremental updates to the data copy, the method comprising the steps of:

protecting the data copy from being written over by designating a current tracking data structure as a transfer data structure and a current transfer data structure as a tracking data structure;

responsive to the start of a full update to the copy of the production data, not marking the state of the production data as being ready for being copied;

updating a session associated with the data copy as being in an inconsistent state with the data copy;

completing the update to the copy of production data; and

unprotecting the data copy after completion of the update by swapping the designation of the transfer and tracking structures and designating the transfer data structure as the current tracking data structure.

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2. (Cancelled)

3. (Previously presented) The method of claim 1, wherein the session is associated with the tracking data structure.

4. (Previously presented) The method of claim 3, wherein the transfer data structure is associated with transferring data.

5. (Previously presented) The method of claim 1, wherein the environment includes a first and second data storage system and the first data storage volume is stored on the first data storage system and second data storage volume is stored on the second data storage system.

6. (Cancelled)

7. (Cancelled)

8. (Cancelled)

9. (Currently amended) A system for handling updates to the data copy when the environment is configured for processing incremental updates to the data copy, the system comprising:

a first data storage volume having production data stored thereon;

a second data storage volume in communication with the first data storage system, and

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having a copy of the production data, denominated as the data copy, on the first data storage volume;

a server in communication with the first data storage volume:  
computer-executable program logic, provided from a computer readable medium,  
configured in relationship to the first and second data storage volumes and the server for causing  
the following computer-executed steps to occur:

protecting the data copy from being written over by designating a current tracking data structure as a transfer data structure and a current transfer data structure as a tracking data structure;

responsive to the start of a full update to the copy of the production data, not marking the state of the production data as being ready for being copied;

updating a session associated with the data copy as being in an inconsistent state with the data copy;

completing the update to the copy of production data; and

unprotecting the data copy after completion of the update by swapping the designation of the transfer and tracking structures and designating the transfer data structure as the current tracking data structure.

10. (Cancelled)

11. (Previously presented) The system of claim 9, wherein the session is associated with the tracking data structure.

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12. (Previously presented) The system of claim 11, wherein the transfer data structure is associated with transferring data.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Previously presented) The system of claim 9, wherein the environment includes a first and second data storage system and the first data storage volume is stored on the first data storage system and second data storage volume is stored on the second data storage system.

17. (Currently amended) A program product for use in a data storage environment and being for handling updates to a copy of production data, wherein the data storage environment includes:

a first data storage volume having production data stored thereon;  
a second data storage volume in communication with the first data storage volume, and having a copy of the production data, denominated as the data copy, on the first data storage volume;

a server in communication with the first data storage volume; and  
the program product includes computer-executable logic provided by a computer-readable medium and which is configured for causing a computer to execute the steps of:  
protecting the data copy from being written over by designating a current tracking data structure as a transfer data structure and a current transfer data structure as a tracking data structure;

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responsive to the start of an update to the copy of the data, marking the state of the production data as being ready for being incrementally copied to update the data copy to account for any incremental changes to the production data;

preparing to update the data copy by protecting the production data from being written over until an incremental copy operation is performed;

updating the data copy in accordance with the incremental copy operation being performed; and

marking the state of the production data as having been transferred, and unprotecting the production data thereby allowing it to be written over by swapping the designation of the transfer and tracking structures and designating the transfer data structure as the current tracking data structure.